ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER	ABUT.	WINGS & WALLS	GEN'L		
503	2161	C.Y.	UNCLASSIFIED EXCAVATION		750	1411			
503	LUMP	LUMP	COFFERDAMS, CRIBS AND SHEETING		LUMP	LUMP			
504	835	S.F.	SHEET PILING LEFT IN PLACE (MIN. SEC. MOD. 38.3 IN^3 PER FT. OF FOOTING)		835				
505	LUMP	LUMP	TEST PILE		LUMP				
506	LUMP	LUMP	PILE TEST LOAD		LUMP				
507	1600	L.F.	STEEL PILES, HP 12 x 53		1600				
509	66,612	LB.	REINFORCING STEEL		30,419	36,193			
511	373	C.Y.	CLASS "C" CONCRETE, FOOTINGS		123	250			
511	506	C.Y.	CLASS "C" CONCRETE, ABOVE FOOTINGS		269	237			
512	74	S.Y.	TYPE "B" WATERPROOFING			74			
514	252,500	LB.	FIELD PAINTING OF NEW STRUCTURAL STEEL, *AS PER PLAN*	252,500					
516	282	S.F.	1" PREFORMED EXPANSION JOINT FILLER			282			
516	40	L.F.	1¼" x 2" PREFORMED NEOPRENE JOINT SEALER		40				
518	225	L.F.	8" PERF., HELICAL CORRUGATED STEEL PIPE, INCLUDING SPECIALS, 707.01, BIT. COATED AS PER 707.04		73	152			
518	34	L.F	8" NON-PERF., HELICAL CORRUGATED STEEL PIPE, INCLUDING SPECIALS, 707.01, BIT. COATED AS PER 707.04		34				
518	9	L.F.	12" NON-PERF., CORRUGATED STEEL PIPE, INCLUDING SPECIALS, 707.01, BIT. COATED AS PER 707.04			9			
518	180	L.F.	8" HALF-ROUND PERFORATED *CORR STEEL PIPE WITH PERF. BOTTOM PAN*	180					
518	294	C.Y.	POROUS BACKFILL		91	203			
523	3	HRS.	DYNAMIC PILE TESTS		3				
809	209	S.Y.	MEMBRANE WATERPROOFING, 3/32" BUTYL MEMBRANE	209					
809	209	S.Y.	1" PROTECTIVE COVER, ASPHALTIC PANELS	209					
810	252,500	LB.	STRUCTURAL STEEL FOR STRUCTURES CARRYING RAILROAD TRAFFIC	252,500					
SPEC.	284	S.F.	INTERLOCKING, ANTI-SKID GRATING, INCLUDING CONNECTING BOLTS	284					

GENERAL NOTES

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO THE REQUIREMENTS OF "SPECIFICATIONS FOR THE STEEL RAILWAY BRIDGES" OF THE AMERICAN RAILWAY ENGINEERING ASSOCIATION, 1979 EDITION.

CONSTRUCTION AND MATERIAL SPECIFICATIONS: STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, DATED JANUARY 1, 1979.

DESIGN DATA:
DESIGN LOADING _ COOPER E-80 WITH DIESEL IMPACT.
CONC. CLASS "C" - UNIT STRESS 1,333 PSI FOR SUBSTRUCTURE.
STRUCTURAL STEEL - ASTM A36 - UNIT STRESS 20,000 PSI (SEE AREA CHAPTER 15-1.2.1)
ASTM A108 - UNIT STRESS 13,500 PSI (BEARING)
REINFORCING STEEL - ASTM A615 - UNIT STRESS 20,000 PSI

RAILROAD AERIAL LINE WILL BE RELOCATED BY THE RAILROAD. THE CONTRACTOR SHALL USE ALL PRECAUTIONS NECESSARY TO SEE THAT THE LINES ARE NOT DISTURBED DURING THE CONSTRUCTION STAGE AND SHALL COOPERATE WITH THE RAILROAD IN THE RELOCATION OF THESE LINES. THE COST OF THE RELOCATION SHALL BE INCLUDED IN THE RAILROAD FORCE ACCOUNT WORK.

UTILITY LINES: ALL EXPENSE INVOLVED IN RELOCATING THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNERS. THE CONTRACTOR AND OWNERS ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

REFERENCE SHALL BE MADE TO STATE OF OHIO, DEPARTMENT OF TRANSPORTATION SUPPLEMENTAL SPECIFICATIONS:
809 DATED 1-1-71, 810 DATED 1-1-71 AND 927 DATED 1-1-71.

PILES SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 55 TONS PER PILE FOR THE ABUTMENTS.

FOUNDATION BEARING PRESSURE: RETAINING WALL FOOTINGS ARE DESIGNED FOR A MAXIMUM BEARING PRESSURE OF 2.5 TONS PER SQ. FT.

STRUCTURAL STEEL
1. EXCEPT AS OTHERWISE SPECIFIED THE 1979 AREA SPECIFICATION FOR STEEL RAILWAY BRIDGES APPLY TO ALL WORK UNDER THIS SECTION.
2. MATERIAL:
   A) STRUCTURAL STEEL SHALL MEET THE CURRENT REQUIREMENTS OF THE SPECIFICATIONS FOR STRUCTURAL STEEL OF THE AMERICAN SOCIETY FOR TESTING AND MATERIALS, DESIGNATION A36. IN ADDITION, ALL FLANGE PLATES, WEB PLATES AND ROLLED SECTIONS USED FOR PLATE GIRDERS, FLOORBEAMS AND STRINGERS SHALL HAVE THE IMPROVED NOTCH TOUGHNESS AS OUTLINED IN SECTION 15.1.2.1 OF THE 1978 AREA SPECIFICATIONS.
   B) HIGH STRENGTH BOLTS SHALL MEET THE CURRENT REQUIREMENTS OF THE SPECIFICATIONS FOR HIGH STRENGTH BOLTS FOR STRUCTURAL STEEL JOINTS OF THE AMERICAN SOCIETY FOR TESTING AND MATERIALS, DESIGNATION A-325.
   C) WELDING ELECTRODES FOR ARC-WELDING SHALL MEET THE CURRENT REQUIREMENTS OF THE SPECIFICATIONS FOR MILD STEEL ARC WELDING ELECTRODES SERIES F-70, AWS 5.1.
   D) PREFORMED FABRIC BEDDING PADS SHALL BE EITHER SHOCK PAD STYLE #15175 AS MANUFACTURED BY ALERT MANUFACTURING AND SUPPLY COMPANY, CHICAGO, ILLINOIS, OR FABREEKA PADS AS MANUFACTURED BY FABREEKA PRODUCTS COMPANY, 1190 ADAMS STREET, BOSTON, MASSACHUSETTS.
   E) SELF-LUBRICATING BRONZE PLATES
      (1). SELF-LUBRICATING BRONZE PLATES SHALL MEET THE CURRENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR BRONZE BRIDGE CASTINGS FOR BRIDGES AND TURNTABLES OF THE AMERICAN SOCIETY FOR TESTING AND MATERIALS, DESIGNATION B-22, COPPER ALLOY NO. 911.
      (2). SPECIAL RECESSES IN A UNIFORM PATTERN FILLED WITH A LUBRICATING COMPOUND SHALL BE PROVIDED IN THE REQUIRED SURFACE (S) OF THE PLATE. THE LUBRICATING COMPOUND SHALL CONSIST OF METALS, METALLIC OXIDES, GRAPHITE AND A LUBRICATING BINDER. THE RECESSED LUBRICATING INSERTS SHALL COMPRISE NOT LESS THAN 30% OF THE TOTAL AREA OF THE PLATE, AND THE COEFFICIENT OF FRICTION SHALL NOT EXCEED 0.10.

STEEL NOTES:
SHOP DRAWINGS
1. THE CONTRACTORS ATTENTION IS CALLED TO THE REQUIREMENTS FOR SHOP DRAWINGS, ARTICLE 1.1.3 SHOP DRAWINGS, AREA SPECIFICATIONS, PARAGRAPH (B) AND (C).
2. ORIGINAL DRAWINGS OR PHOTOGRAPHIC REPRODUCIBLES ON MYLAR OR EQUIVALENT FILM SHALL BE FURNISHED AT THE COMPLETION OF THE CONTRACT UNDER 1.1.3 AREA SPECIFICATIONS. REPRODUCIBLES MADE BY THE DIAZO PROCESS ARE NOT ACCEPTABLE. THEY SHALL BE SENT TO: CHIEF ENGINEER, N. & W. RAILWAY CO., 8 N. JEFFERSON STREET, ROANOKE, VA. 24042, ATTENTION: ENGINEER OF BRIDGES.
3. THE CONTRACTOR SHALL FURNISH TWO COMPLETE SETS OF DETAILED SHOP DRAWINGS TO THE COMPANY FOR APPROVAL PRIOR TO STARTING FABRICATION. UNCHECKED DRAWINGS SHALL NOT BE SUBMITTED FOR APPROVAL.
4. THE REJECTION OF OR THE PROCEDURE FOR THE CORRECTION OF SHOP DRAWINGS WILL NOT BE CONSIDERED AS CAUSE FOR DELAY.
5. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL OTHER WORKING DRAWINGS, AS REQUIRED BY THE COMPANY, FOR ANY OR ALL PARTS OF THE PROJECT WHICH DETAIL THE DESIGN AND ERECTION OF SHORING, FALSEWORK OR SPECIAL CONSTRUCTION PROCEDURES.
6. APPROVAL BY THE COMPANY OF DRAWINGS, DESIGNS OR SPECIAL PROCEDURES SHALL NOT RELIEVE THE CONTRACTOR FROM FURNISHING MATERIAL OF PROPER DIMENSIONS, QUANTITIES, AND QUALITY, NOR WILL SUCH APPROVAL RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS OF ANY SORT IN THE DRAWINGS FOR THE STRENGTH AND SUFFICIENCY OF BRACING, FALSEWORK, FORMS AND OTHER CONSTRUCTION PROPOSED OR DESIGNED BY HIM.

ASPHALTIC PANEL PROTECTION
1. ASPHALTIC PANEL PROTECTION FOR WATERPROOFING MEMBRANE SHALL BE IN ACCORDANCE WITH AREA SPECIFICATIONS, 29-2-5(G), WITH THE FOLLOWING SPECIFIC REQUIREMENTS:
   A) THE PROTECTION FOR WATERPROOFING SHALL CONSIST OF TWO LAYERS OF ASPHALTIC PANELS, EACH 1/2" THICK. THE PANELS PLACED ON THE HORIZONTAL SURFACE OF THE DECK SHALL BE PLACED DRY. THOSE PLACED ON THE INCLINED SURFACES SHALL BE LAID IN A COATING OF BONDING ADHESIVE SIMILAR TO THAT USED FOR THE BUTYL RUBBER MEMBRANE.
   B) AN ASPHALT SEAL COATING MEETING THE REQUIREMENTS OF ASTM D449-49, TYPE B, SHALL BE APPLIED HOT BY MOPPING TO THE TOP OF THE ASPHALTIC PANELS SO AS TO COVER THE TOP AND FILL THE JOINTS BETWEEN THE PANELS.
   C) PAYMENT SHALL BE MADE AT THE UNIT PRICE BID PER SQUARE YARD FOR 1" PROTECTIVE COVER, ASPHALTIC PANELS. IT SHALL CONSIST OF ASPHALTIC PANELS, BONDING ADHESIVE, ASPHALT SEAL AND ALL LABOR AND EQUIPMENT NECESSARY TO COMPLETE THIS ITEM OF WORK.

WATERPROOFING
BUTYL RUBBER MEMBRANE WATERPROOFING
1. BUTYL RUBBER MEMBRANE WATERPROOFING SHALL BE IN ACCORDANCE WITH THE LATEST AREA SPECIFICATIONS, CHAPTER 29, WITH THE FOLLOWING SPECIFIC REQUIREMENTS:

FRANKLIN CONSULTANTS INC. 3/28
Consulting Engineers
COLUMBUS, OHIO

ESTIMATED QUANTITIES & GENERAL NOTES

BRIDGE NO. LAK - 306 - 0635
S.R. 306 UNDER N. & W. RAILROAD

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HM	GKS	CKS	PCB	JA	6/13/80	11-14-80